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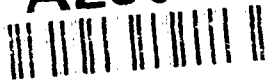
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ENHANCING TEACHERS' SKILLS FOR EXECUTIVE LEVEL SEMINARS

BY

Lieutenant Colonel Johnston Beach
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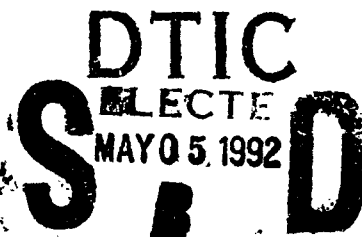
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The United States Army War College's mission is to produce officers prepared to assume the responsibilities of strategic leadership. The means of achieving these ends is to develop the students' ability to think; and the way to accomplish this development is through executive-level seminars. Strategic leaders must make informed decisions which allow them to take authoritative action without proof of its "correctness." Learning the essential thinking skills requires student discussions, explicit emphasis on critical thinking procedures and methods using varied examples, and verbalization of methods and strategies. For this to occur the seminar climate must be one of trust and an openness to change. The instructor must create this atmosphere and effectively facilitate critical inquiry from the resulting discourse. A framework for instructors to develop the skills necessary to accomplish these is presented.

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USAWC MILITARY STUDIES PROGRAM PAPER

ENHANCING TEACHERS' SKILLS FOR EXECUTIVE LEVEL SEMINARS

AN INDIVIDUAL STUDY PROJECT

by

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ABSTRACT

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INTRODUCTION

"Strategic leadership is accidental, being in the right place at the right time. But if opportunity is essential, so is preparation."[1] Clausewitz demystifies the term "genius" by referring to it as merely "a very highly developed mental aptitude for a particular occupation."[2] The purpose of the United States Army War College (USAWC) is to augment this "preparation" by nurturing the development of the "mental aptitude" of those military officers and civilian attendees. Specifically, its mission is to:

> Produce graduates who are prepared to assume
> leadership responsibilities in a strategic
> security environment during peacetime and
> wartime.[3]

Graduates are to have an executive level[4] frame of reference that encompasses "an understanding of the previous decision base and the situation, particularly the cause and effect relationships that determine outcomes." This frame of reference is based on experience and knowledge. "It is a 'mental map'...an operating model of reality" which the graduate uses to "acquire and interpret information."[5] More

simply, our frame of reference is the cognitive, rather than visual, lens through which we "see" the world.[6]

If achieving an executive frame of reference is the Ends, then the Ways is by developing the students' abilities to think; and the Means is through executive level seminars.[7] The "intent is to nurture how and why [students] think as [they] do rather than what [they] think...The student seminar group is [the] basic organization for learning."[8] Unfortunately, accomplishing this objective is even more difficult than it might first appear. For what fails to be noted above is that an individual's frame of reference shapes the very experiences and knowledge from which it too is formed. This in turn, has a major impact on a person's thinking. We are, in fact, confronted with a "chicken and egg" conundrum. The Ends and Ways cannot be separated. An individual's frame of reference tends to be self-limiting. The "lens" too, needs to be taken out and looked at.[9]

This paper will clarify the nature of critical thinking which USAWC is attempting to foster. Furthermore, it promotes the notion that participation in executive level seminars can not only have a favorable impact on the development of one's thinking, but give rise to a restructuring of an individual's frame of reference. One's frame of reference can be self-enriching, as well as, self-

limiting. Finally, it describes a program to enhance the skills of those charged with the responsibility of facilitating this development.

THE RAREFIED SWAMP

"Why do you want to mess with my thinking? Thank you very much, but I've gotten pretty far by doing what I do; `If it ain't broke, don't fix it!'" This is a legitimate concern. People attending executive level seminars in any organization are success stories. They have excelled at what they do. They are their organization's definition of excellence. So why change?

All this success has made them the top and most senior members of the organization's '"rising stars." And herein lies the answer. In the organizational scheme, these people are still a promise, a potentiality. Tested and tried, the best bet, but they are still a possibility--not a final product. The tasks remaining to be accomplished require skills and abilities not yet fully developed.

Progression to full maturity in life in general, and in one's professional development in particular, is not a linear function. There are plateaus, transition points along the way. There is nothing broken, nothing to be fixed. Executive level schooling is not remedial, but

rather, transformational. It is a transition point. Executors must become executives.[10]

The transformation from executor to executive is the transformation from problem solver to problem setter.[11] As an executor, being credited with good thinking--"having a good head on your shoulders," has generally been a boss's evaluation of the skill with which given missions have been accomplished. Executives, however, work in an environment of great "complexity and uncertainty which demands the imposition of order"[12] before actions can be taken. Effective thinking at this level therefore, requires a broader capacity, the ability to identify the questions to be asked, to decipher problems, and to formulate goals.[13] Executives must have a strategic perspective. Their focus is in front of them on what cannot yet be seen. They must insure that the course is gainfully charted before skills and resources are brought to bear "in conditions of ignorance, risk, and confusion."[14] The stakes are too high to do otherwise.

> ...there is nothing so terrible in all human experience as a bad plan effectively carried out, when immense technical resources are concentrated in solving the wrong problems. Hell has no senate more formidable than a conspiracy of shortsighted leaders and quickwitted experts.[15]

Clearly disaster can be the product of a flawed plan, as well as maladroit execution. Perhaps the greatest catastrophe, however, is the coupling of an inept plan with a highly effective operator. In such instances, even the potential for success is non-existent. Failure is assured. The cost of failure may vary, but it will be paid.

Executive leaders must shape the future, not fall victim to it. They must be proactive rather than reactive. This indeed is a profound challenge. The modern world is a kaleidoscope--the cliche makes it no less true. The pervasiveness and significance of change is enough to make even the most self-confident individuals shrink from the task of leadership. The problems to be solved are ill-defined; the decisions to be made unclear, the second and third order effects near imperceptible. Donald Schon's metaphorical depiction of the world of professional practice captures this situation. He describes a "varied topography" with "a high ground overlooking a swamp. On the high ground manageable problems lend themselves to solution through the application of research-based theory and technique. In the swampy lowlands, messy, confusing problems defy technical solution."[16] Indeed they tend not to present themselves as problems at all but as "messy situations."[17]

In the slippery tangle of the swamp, problems and decisions must be "constructed from the materials of

problematic situations which are puzzling, troubling, and uncertain."[18] Parameters are seldom available and never clear. The novel and unique thrive. There are competing views on the nature of the problems as well as their solutions. It is difficult to determine if or when an adequate solution has even been identified. "The right" answer does not exist, but some answers are better, and some are wrong. Deception abounds. Good answers conflict with other good answers, and each carries a cost. The standard application of trusted principles no longer works. Taken-for-granted norms of thought and behavior also fall short of the mark. And the emerged leaders have replaced the old authority in whom they had *so often taken* recourse. They have no one to look to but themselves. Yet decisions must be made; at times, quickly. Welcome to the executive suite. Welcome to the swamp!

CRITICAL THINKING

Clausewitz too was interested in such murky matters. He noted that the aspect of war attracting the greatest attention is the engagement. This is so because in spite of the "fog of battle," commanders have to make "rapid and accurate decision[s]." He referred to the "coup d'oeil" or the "inward eye" characteristic of true military genius.

"Stripped of metaphor...the concept merely refers to the quick recognition of a truth that the mind would ordinarily miss or would perceive only after long study and reflection."[19] Today we might call it intuition, or more accurately, insight.

"What about this intuition thing? My MBTI tells me I have an `SJ Temperament.' Are you saying only `NT's need apply?"[20] Take heart, although ignorance far outweighs knowledge when it comes to understanding intuition, it seems evident that intuition is neither gender related nor bestowed by a capricious God. Within limits, intuition can be developed. Clausewitz again, offers us some thoughts. He posited that military genius, of which he believed intuition to be a key element, was possible only among highly intelligent peoples of advanced societies.[21] This conclusion is debatable, but does suggest that experience, as well as intelligence, is a factor and thus "the inward eye" is neither randomly assigned nor divinely conferred. It is acquired.

Modern educators and psychologists have also helped remove the shroud from the concept of intuition--let us call it insight. Not surprisingly, it involves learning and thinking; and the interaction between the two. In making sense out of situations perceived as unique, individuals make use of information already in their possession.[22] At a

minimum, these prior situations serve as precedents or examples from which comparisons can be made. The executive "sees the unfamiliar, unique situation as both similar to and different from the familiar one, without first being able to say similar or different with respect to what."[23] So one's past is important, because it brings "a repertoire of actions, examples, images and understandings to the unique situation."[24]

The "problem-setting experiment"[25] can now begin. This process allows identification of the problem, and definition of the decision, the ends to be achieved, and the means by which they will be accomplished.[26] In essence, a measure of order has been brought to a situation where none had previously existed, converting it to a problem to which actions can be applied. The speed with which all this can be accomplished depends upon the particular problematic situation and the extent of the repertoire available to engage it. It seems that "the moment of insight is only possible after some patient accumulation."[27,28]

Just what is a "problem-setting experiment?" Some call it reflection-in-action,[29] others learning-in-action.[30] It involves individuals' conversation with both their actions and their thinking, and the impact of each. It is a continuing and redundant metacognitive[31] process. Yesterday's answers now find their greatest value in helping

to formulate "discriminating questions [that can be] put in conditions of chaos and uncertainty and in the absence of a definite answer."[32]   Rather than producing "the answer," such questions may lead to a course of action to which further questions must be directed. At other times, they provide new assumptions upon which to reflect. Ultimately, this could not only lead to a restructuring of the problematic situation, but quite possibly to the individual's basic frames of reference. Application of critical thinking to each aspect of this discourse is essential to a successful outcome.

Critical thinking is a rational response to problematic situations that cannot be resolved definitively and for which all the relevant information may not be available.[33]   It involves an investigation of the problematic situation, the actions being taken, the actor's frame of reference, and the ongoing impact all three have on each other. The purpose is to "arrive at a hypothesis or conclusion" that can be "convincingly justified."[34] Justification is necessitated by the ill-defined nature of the problem.[35] This in turn, allows the individual to make a committed decision in a relativistic and uncertain world. Authoritative action can then be undertaken without proof of its "correctness." It is important to note that critical thinking is not an endless process nor a means of avoidance.

Quite the contrary. The critical thinker fully understands that there is real uncertainty about how a problem may best be solved, yet is able to offer an informed judgment about the problem situation that renders some kind of closure.[36] Critical thinking allows an individual to determine what to believe and do when neither are ascertainable. It also enables the thinker to answer the question, "When do I stop thinking?"

FACILITATING CRITICAL THINKING

The question, of course, is out there. "Can critical thinking be taught?" The answer is a firm, "Yes and no." A person's thinking style develops over an extended period of time, and is the outcome of at least three factors: (a) an innate range of intellectual potential; (b) incidental learning through reinforced trial and error, or exposure to models; and (c) formal educational processes.[37] The relative weight of each of these elements is difficult to determine and may well vary from person to person. The executive level seminar, however, contributes only a portion.

Perhaps a more important question is, "Can critical thinking be learned?" Again, the answer is, "Yes and no," but it is clear that learning is the primary ingredient in

two out of the three components. This "teaching-learning"
distinction is not inconsequential. It has to do with the
nature of the cognitive processes involved, as well as the
responsibilities and skills instructors must bring into the
school house. It is the difference between instilling
knowledge and helping students learn to pursue it.[38]

The next question, of course, is "What is the most
effective method for facilitating the learning of critical
thinking?" The best answer is that it depends on the
goal, the students, the content, and the teacher.[39]

Goals

The ultimate goal, of course, is for students to
significantly enhance their ability to think effectively.
Although elegantly concise and simply stated, several
proverbial cans of worms have just lost their lids. Zealots
from various educational and philosophical camps are
readying themselves for what is to follow.

For some twenty years, there have been several highly
visible developments in education dealing with instructional
objectives and the mastery model of learning.
Behaviorists[40] are unequivocal, terminal behaviors must be
specified in precisely observable and measurable terms.
"Enhance ability to think effectively" would be unacceptably
nebulous. Theorists who view learning as a "process of
inquiry," on the other hand, vehemently denounce the very

idea of preset or prescribed learning objectives.[41] They see objectives as not only restrictive but unsound. These educators "do not intend or expect one outcome or one cluster of outcomes but any one of several, a plurality."[42] The difference here is between teaching by objectives, and teaching toward objectives.

Perhaps there is some middle ground. If one were to accept that there are two broad dimensions by which subject matter can be categorized: "the degree to which the content or domain can be 'specified' and the degree to which the content or domain can be 'mastered,'[43] some resolution can be achieved. Such a breakdown would result in three combinations of material: one in which the entire content is completely specifiable and masterable; one in which the entire content is specifiable but not masterable; and, one in which the content is neither specifiable nor able to be mastered.[44] A third element could also be added to these categories concerning the necessity to master the domain. The domains that can be specified could then be either essential to master or non-essential.[45] Logic would dictate that if a domain is not masterable it cannot be essential to do so.

Keeping the above discourse in mind we return to the discussion of goals. Probably all would agree that "enhance ability to think effectively," is one of those goals that

cannot be totally specified, cannot be entirely mastered, and fortunately, is not essential to master. A journey such as this has no end.[46] This does not mean, however, it should not be undertaken. In fact, all who do will succeed, though not in equal measure. The intent of an executive level seminar is for all participants to expand their individual abilities to the greatest extent possible. Furthermore, it is seen as the beginning of the journey and not an end in and of itself. Now, let us return to the middle ground.[47]

To accommodate the difference between the call for specific behavioral objectives with minimum standards, and the desire to have neither, some have used the term "behavioral indicants."[48] This involves an analysis of the desired outcome to determine a set of more specific, and generally agreed upon, characteristic behaviors. No minimum standards of achievement, however, would be applied, nor is there any claim that these comprise a complete set of constituents. This is a practical solution, though perhaps not fully satisfying theoretically. It helps, of course, if the behavioral indicants are valued in their own right independently of their relationship to the top-level goal.[49]

Critical thinking is difficult to quantify, and there has been less than full agreement on just what constitutes good thinking. However, many are very willing to try.

I propose that we abandon polarizing debates and focus on identifying a manageable framework of common skills that clearly generalize across academic and practical areas. If we hope to teach students to develop generalized and specialized reasoning strategies, we must provide them with a coherent skills framework that will help them understand how these general and specific strategies relate to each other and how they can be brought to bear up to academics, life, and novel tasks.[50]

Some of the indicants that have been identified are: "Distinguishes between facts and opinions," "Identifies errors in reasoning,"[51] "Listens carefully to others' ideas," "Distinguishes between logically valid and invalid inferences."[52] Similarly, others have classified thinking "into skill clusters" that involve clarifying and challenging issues and terms, analyzing arguments, judging the credibility of evidence, using inductive and deductive reasoning, identifying and handling argument fallacies, and making value judgments.[53] These are but a few examples taken from more extensive lists, but they are enough to make two points. First, "there is a considerable difference between good thinking and the kind of thinking that most of us habitually do."[54] Secondly, enough constituent behaviors can be identified and specified so that they can be taught, practiced, and learned, just as any other skill.[55] Alas, it will always be a matter of degree.

Students

Adults attend executive level seminars. And adults are
not children. Sometimes the blinding light of the obvious
prevents us from seeing the necessity of giving it some
thought.[56] The not so obvious educational implications will
emerge shortly. Without going into detail at this point,
five characteristics will be noted.[57] First, by definition,
adults are "self-directing." They have a need to be seen
and treated by others as responsible and independent.
Secondly, adults possess a rich reservoir of experience
which they bring to the learning situation. Next, adults
become ready to learn when they perceive a need to do so.
This need generally arises from developmental and social
changes in their lives. Related to this, they have a
problem-centered, as opposed to a subject-centered,
orientation to learning. They want learning to be
immediately useful. Finally, their learning is motivated
primarily by internal desires such as enhanced self-esteem
and a better quality of life.[58] Another attribute, however,
more peculiar to participants in executive level seminars
warrants fuller discussion.

As previously stated, attendees at the USAWC or any
other executive level seminars, are the top performers of
the upper level of an organization's middle echelon
leadership. This presents yet another epigrammatic
situation--the "double-edged sword." Adults in general, and

this high-powered group in particular, are more task oriented and have a stronger desire to "do the job right," than would a group of younger students. Moreover, seminar attendees tend not only to be a more intelligent subsample of the adult population, but again, just by virtue of their adult status, they have an "expanded repertoire and can select from the environment those things relevant to the task"[59] Their work efficiency and ability to learn have never been better. In the developmental schemes of Jean Piaget[60] and William Perry,[61] adults have the potential to engage in the most elevated forms of intellectual activity. They are able to generate possibilities and to rethink in light of those possibilities. Moreover, they can see the relationship between factors and the second and third order effects.

Paradoxically, problems plague this pack of presumably perfect pupils.[62] Paramount among these problems is these people tend to be prisoners of the past--their own past. "[W]e are caught in our own history and are reliving it...new experience is assimilated to and--transformed by-- one's past experience."[63] Consequently, the very nature of an ill-defined problem is determined in greater measure by the solver than by any external reality.[64] "[C]hange can now only be introduced by first abandoning what has up to now felt like the `right' approach and them stepping out of

this frame of reference to `reframe' the problem."[65] This
is evermore difficult if, to date, these frames have always
worked. Seminar participants' prior success and exceptional
knowledge make them less willing to take risks and explore
new approaches. They are likely to rely on strategies that
have worked in the past, even when they are no longer
effective. They "are reluctant to suffer a blow to self-
esteem by being proved `wrong.'"[66] Why is this so?

Frames of reference must be revisited. These "mental
maps", "cognitive lenses," "operating model of reality"
through which we "acquire and interpret information," are
essentially a set of firmly internalized assumptions formed
as an outcome of the individual's continuous adaptation to
whatever life has meted out. Enmeshed in this "network of
assumptions" are the "person's beliefs, wants, norms, and
factual knowledge."[67] They give direction and meaning to
life. In essence, they define for us who we are.

The process of critical self-reflection, therefore,
carries with it the prospect for profoundly changing not
only the way we make sense of the world and other people,
but of ourselves.[68] Critical thinking requires more than
cognitive activities such as logical reasoning or
scrutinizing arguments for assertions unsupported by
objective evidence. Thinking critically means recognizing
the assumptions undergirding our beliefs and behaviors. It

demands we be able to justify our ideas and actions.
Foremost, it means we earnestly endeavor to judge the
rationality of these justifications.[69]

> Because we are all trapped by our own meaning
> perspectives, we can never really make
> interpretations of our experiences free of bias.
> Consequently, our greatest assurance of
> objectivity comes from exposing an expressed idea
> to rational and reflective discourse...Critical
> reflection means to challenge the validity of
> presuppositions in prior learning...critical
> reflection addresses the question of the
> justification for the very premises on which
> problems are posed or defined in the first place.
> can result in changes in core values...this allows
> paradigm shifts to occur. [70]

How we understand and account for the events of our
lives; how we find significance in these events and create
meaning, are "interpretive activities that occur within the
framework of our assumption clusters."[71] They provide us
with what we call "human nature," "common sense," and
"truth." Because they are so familiar, we do not question
them. Because they have been so dependable, we trust them.
Because we have been so successful, we do not readily part
with them.

Content

Traditionally "education" focuses on the teaching of
"course content;" the facts, principles, and theories which
students are to learn, and teachers are to impart--knowledge
replacing a vacuum between the student's right and left ear.

Relatively little attention is given to teaching higher-order reasoning skills, though in recent years, interest has been growing. As with every other aspect of executive level seminars discussed to this point, "What to teach?" is subject to some debate. Even if the primary objective is for students to enhance their thinking skills, a curriculum must be developed. What is the nature of the sponsoring organization? How extensive a program is being designed? What resources are available? These are just a few of the many questions in need of answers. In some instances, these seminars could take the form of workshops. The USAWC is probably unique in the length and extent of offerings. It will, however, be the one discussed.

Some question the necessity of teaching critical thinking skills at all. They assume these faculties will spontaneously occur through a natural developmental unfolding, or that students will eventually stumble[72] upon them as they engage various assignments. The most common point of discussion, however, centers on whether to have a separate course, specifically designed to facilitate the learning of thinking skills or to infuse this effort into the overall curriculum. No need to hold your breath waiting, given the time and resources, the most effective results come from doing both.

Knowledge and thinking are interdependent.

> Clearly the substance of thought, if not the
> process of thinking, is constrained by what one
> knows...The vast majority of people who have made
> great and original contributions to their fields
> have not only been effective thinkers, they have
> known a lot about their area; their heads have
> contained, as it were, much food for thought.[73]

Teaching thinking and teaching conventional content

therefore, are complementary. Thinking requires one to

think about something.[74] Recognizing the interdependence of

thinking and knowledge, however, does not deny the

distinction. People may well differ in applying what they

know. Education must both impart knowledge and develop

thinking skills.[75] Neglect of either produces a diminished

outcome.

The USAWC prepares attendees for their final

assignment, more so than the next.[76] Acquiring evanescent

facts does not constitute adequate preparation. Even those

retained as mementos of war college days may be "of the old

school," when alumni's names start appearing on the entrance

of their various organizations' executive suites. Graduates

rather, must have come to grips with the indeterminacy of

knowledge; and poised in its presence, be their own, most

trusted consultant. "Okay, cut all this rococo verbiage.

These guys--and gals--have to confront all this VUCA stuff

and they're left handling the buck. How do we train them to

do it?"[77]

Unfortunately, when it comes to helping students become critical thinkers, scholars seem more convinced that the teaching should be done, than how it should be done. Most writers on the topic, however, identify three fundamental elements in learning to think critically.[78] First of all, a person must have the proper attitude. Discussion of this ingredient will come later. The other two factors are knowledge and skill.

Although thinking comes quite naturally it seems that critical thinking does not.[79] As Henry Ford put it "Thinking is hard work, and that's why so few people do it!"[80] So as a necessary starter, students should be specifically instructed in the methods of logical inquiry and reasoning. The skill in applying them will come only from relentless practice. This does not mean a course in formal logic. It means analyzing and scrutinizing the types of behaviors we engage in daily when solving problems or making decisions. Previously, we discussed behavioral indicants of critical thinking such as "judging the credibility of evidence" and "handling argument fallacies." The question now becomes, "What do you have to know or do to execute these successfully?"

The behaviors involved in performing these tasks are, of course, many and frequently overlap. Certainly, in judging the credibility of evidence we would want to find

out the source of the evidence. Is it a person or scientific analysis? If it is a person is there any conflict of interest? We are less likely to believe the account of the person involved in an accident than that of an uninvolved eyewitness. Is it an eyewitness account or hearsay? Does the fact that I like the source person or dislike the source person have an impact? Generally, we tend to believe people we like over people we dislike. How long ago did the event occur for which the evidence is being given? The list is virtually endless.

Errors in reasoning are common. For example, typically those committing an act perceive things differently than those observing it--the so called "actor-observer bias." If we see a person angrily shouting at a sales clerk, the tendency is to assume the person is a rude individual rather than entertain the probability that there is some external cause for this behavior. To more accurately determine this we need to answer three questions. First, does this person frequently shout at this sales clerk? Does this person frequently shout at other people? Do other people frequently shout at this sales clerk? If we were to find that this person gets along well with everyone else, and that many people get into arguments with this sales clerk, we would more logically attribute the reaction to the sales clerk and not the person shouting. At other times we are

"self-serving" in our attributions. Students do well on an exam and the teacher thinks, "I'm a good teacher." If they do poorly, "Students just aren't putting in the work they need to."[81] Such biases may also occur as a result of selected historical readings. Did the writer wear a blue or a gray uniform? Were they in the streets of Chicago in `68 or in the convention hall? Is it autobiographical?

We often mistake covariation with cause and effect. That is, if two things consistently occur together, one is assumed to cause the other. Though this can be true it often is not. In some instances, there could be a third variable. A recent newspaper article reported that watching television caused students to get lower test grades. The evidence cited came from a survey of twelfth graders. Those who reported watching less than one hour of television per day scored fourteen percent higher on state exams than did those stating they watched four hours or more.[82] Though the T.V. is implicated, is it the culprit? Is it not also quite possible that less intelligent children become quickly frustrated by their inability to complete homework and watch television instead. In this case, the cause of the low scores is low intelligence not television. Take the television away and listening to the radio or playing baseball becomes the malefactor. Similarly, surveys show children who watch more television tend to be fatter. Does

television make them fat? Perhaps more obviously, in 1989 , the New York Times reported that the best predictor of the stock market was not the high priced financial consultants but the winner of the Super Bowl. In twenty out of twenty-two years, if a team from the old national football league won, stocks went up; if they lost, stocks went down.[83] No other indicator came close to this predictive accuracy.

Other types of fallacies abound. If we believe something to be true, we are inclined to attend only to confirmatory data.[84] Negative evidence is ignored or discounted. We also have a proclivity to believe what we more often hear or can more readily remember. Thus, we are more frightened to fly than to ride in a car. Yet the plane is statistically safer. Likewise, we have undue fear about being mugged in New York City and unwarranted optimism about winning the lottery. The chances of either ever happening are quite low.[85] The fact that these events capture much publicity, and are therefore more available to our memory, however, makes us think otherwise. These are but a few of the failures in logic that frequently characterize our thinking.[86] Focusing on errors not only provides good insights into how people reason, but once identified permits awareness and counter measures to be taken.

Some theorists have devised specific strategies aimed at helping us think more objectively. They usually have

cute names--the strategies that is. SOME LIP[87] and IDEAL[88] are but two. These names help us remember how to think more effectively. We do not have to remember how to be illogical, we seem to come by that quite naturally.[89] SOME LIP is the last portion of the phrase, "Give `em some lip" coined by Roger Peters. It stands for stands for:

1 Consider Sources.
2 Maintain an Open mind.
3 Define Meaning.
4 Evaluate Evidence.
5 Analyze Logically.
6 Examine Implications.
7 Unearth Presumptions.

This sententious quip was formulated to help "impulsive, action-oriented leaders" to think "more like Spock,"[90] or for our purposes, more critically. It cautions us to remember that all sources are subject to biases. As pointed out above, they come quite naturally. "So, what are they?" It reminds us that we are no different. "What are our biases?" And, of course, people do have a way with words. "Disinformation?" "Low fat?" To "neutralize?" "To act with extreme prejudice." "No new taxes." Or perhaps, "build down," and smaller-"better." It sometimes pays to envision oneself as Bob Woodward and press for a "little clarification." Undeniably, there is a difference between a fact and an opinion; even between a valid argument and the truth. But do we always know which is which? So, check the

"evidence." However, "even the hardest evidence is useless without logic."[91] The teacher, frustrated by the students' poor performance states, "I taught them this material; they just didn't learn it!" Say, what? Maybe we have to go back a few steps to check the "meaning" of the word "taught." Either there is confusion over the definition of this word or there is a little slippage in logic. Anyone who has watched a good lawyer or magician knows sometimes only the firm application of logic can accurately decipher what is true, or most likely true, from what it appears at times to be. "Ir the argument is true, then what?"[92] Even when faced with a sound argument, there is a necessity to look ahead at the implications. Maybe the fallout or aftermath is unacceptable. Finally, we must check the presumptions upon which the decision is based. They often are not available until the entire argument is laid out. "This national health care package is workable." Perhaps, but if this is based on the presumption that "there will be an upturn in the economy in the third quarter of next year," this might give pause for further thought. Remember the T.V. that was making kids stupid? What do we suppose the kids who were not watching television were doing? Answering this question may or may not support the conclusion.

Similarly, IDEAL is short for five components or stages of thinking critically, applicable to a wide range of topics.[93] These are:

```
1 I = Identify the problem.
2 D = Define the problem.
3 E = Explore strategies.
4 A = Act.
5 L = Look at the effects.
```

The focus here is problem solving, but the need for critical thought remains. Being able to identify an existing problem is a critical attribute for any executive level leader. Accurately defining the nature of the problem is equally important. Let us talk television, again. The problem was originally defined as the T.V., but what if the real problem is the need for extra help with school work? Eliminating televisions will just be wasted time, energy, and money, not to mention a dramatic drop in domestic tranquility, because these kids are now getting in their parents' way. Once we have honed in on the problem, it pays to study various approaches to solving it. Finally, some action must be taken. We do not, however, want to proceed unchecked. It is important to continue looking for unforeseen problems or consequences--so called second and third order effects. Admittedly, careful readers of this manuscript are correctly saying, "All this is easier said than done!" True enough; however, as stated, these pithy contrivances do act as handy

reminders to think critically as best we can. They also help us to keep in mind that while often "there are no simple solutions; [there are] `intelligent choices.'"[94,95]

Knowledge of strategies does not a critical thinker make. This is an example of an essential as opposed to a sufficient component. Making such discriminations are also essential but not sufficient to being an effective critical thinker. However, it does point out the need for practice. Skills develop through rigorous exercise. And it is unlikely that participants are going to have the patience for repeated lessons about critical thinking. Adults, remember, are problem-oriented not subject-oriented. They need to use what they learn or they lose interest. Direct instruction on the concepts and methods of critical thinking is important to build awareness, but the real content of the program will come from the students critically engaging the rest of the curriculum.

Critical thinking must have a good knowledge base. Valid information is essential to informed choice. Knowledge of yesterday's solutions and secrets is necessary but not as an ends, only a means. Content must be used not merely acquired. "[R]ather than copying what others have already shown to be useful--perhaps in conditions unlikely to recur," fresh questions must be posed and challenged.[96] Further learning can only occur as the students increase

their ability to ask good questions; good questions of others, the situation, and themselves. Knowledge informs the thought that gives rise to the capacity to ask good questions.

Time on task is essential. Learning inquiry skills demands sustained inquiry. Assignment must require it and permit it. There must be choice. The self-directed, self-motivated nature of seminar participants makes it unlikely they will commit the necessary effort unless it is of their own choosing. The more immersed, the better the results. "If students receive only occasional assignments requiring higher level skills, they are unlikely to acquire strategic patterns."[97] The curriculum, therefore, must be developed to provide maintenance, generalization, and transfer of higher-order thinking skills. This demands writing and discussion.

"Writing is relevant to teaching thinking both because (a) writing demands thinking and (b) writing is a vehicle for thinking."[98] More than just an occasion for thought, writing is a means of thinking. Thoughts are worked out and developed, not just expressed.[99] Papers must be discussed. It is through open discourse that we attempt to understand others' assumptions and are forced to become aware of our own. The experience of disequilibrium is essential. Without it, no development can occur. Our attempt to gain

consensual validation requires us to counter challenges with justifications--and often to justify these. Sometimes we are unable. This causes change. All too rarely do students witness the process by which others interrogate works, compare conflicting interpretations of an event, or "discover patterns in seemingly chaotic evidence."[100] As important, there are few other circumstances powerful enough to induce us to openly interrogate ourselves. Problems are reframed. Assumptions are scrutinized. Making explicit our assumptive worlds is an essential task of a critical education. Consequently, our frame of reference restructures. We now possess a somewhat different world view, along with an expanded "repertoire of precoded intellectual performance patterns that function relatively automatically in appropriate contexts."[101]

Teachers

It has been written that "none but the humble become good teachers for adults."[102] Perhaps, it should be the very humble when the "subject" is critical thinking. A critical education is the learning process itself. And the most effective method, if one had to make a general statement, is interaction with other students. In the best "run" classes an observer might not know which participant was "the teacher." "So why have a teacher?"

The flip answer is "We don't have `a' teacher." But there is a teacher, and this individual is the most important person in this classroom. The teacher is in charge of the class culture. Though not fully discussed, the third fundamental element in learning to think critically, is to have the right attitude. Developing the "proper mental attitude" is not easy.

> Like so many things in life that are good for us, and that we may even be disposed to do-- exercising, dieting, reading--becoming a critical thinker may require us to make changes in our customary ways of doing things. We have to cultivate good thinking...like a good physical fitness program or serious regimen of study in a major discipline, a program to improve thinking requires discipline.[103]

Students and teachers alike must be intellectually curious. They must be open-minded, flexible, and respectful of others' points of view. At the same time, they must be intellectually honest and skeptical, demanding evidence, yet when presented, accepting it as valid even if contrary to their own position. Finally, seminar participants must be persistent, steadfastly seeking to resolve issues and find alternatives, nevertheless, having the decisiveness to reach a conclusion when the evidence warrants.[104] Theoretically, these classes exist; in the real world, they are artfully crafted and inspired by teachers--not the traditional teacher, not even the dictionary defined teacher, but a

teacher none-the-less. In vogue, facilitator, coach; one who helps others learn--a good teacher. This teacher sets and maintains this climate.

Distinguishing the mediocre teacher from the outstanding teacher, is the ability to promote the desire and enhance the capacity of students to learn.

> Learning theorists and educators are in general agreement that motivated students learn more readily than unmotivated. There must be a willingness to work hard. Learning is not a gift any school can give. It is a prize the learner himself must pursue.[105]

There are no recipes for making or becoming good teachers, no algorithmic path to success. Good teachers are those who are doggedly determined to be good. Teachers who can live with frustration and find satisfaction in incremental progress. They are individuals who have enough gameness to try untested ideas; and to examine what went wrong, and not give up. Teachers who are willing to relinquish the oracle's[106] mantle and are successful in resisting students' attempt to regarb them. They openly model what it means to deal with volatility, uncertainty, and yes, complexity and ambiguity.

Good teachers are well grounded in their subject, they understand the critical thinking process, and they know their students. To form a teacher as a collaborative-partner relationship with their students, teachers must not

only vacate their position of authority but step into their

students' world--into their frames of reference.

> Educators must try to enter the phenomenological
> world of the student so that his structures of
> understanding and interpretive filter can be
> experienced and understood...as closely as
> possible. As a first step in encouraging critical
> reflection, educators have to see the world as the
> learners see it. We must become phenomenological.
> detectives, immersing ourselves in learners'
> worldviews and assumption clusters, as a first
> step in exploring how to encourage them to move
> outside of their comfortable paradigms.[107]

The analogy is teacher as maneuver warfarest trying to get

inside another's OODA Loop.[108] Rather than subduing,

however, the objective is to help the students explore this

territory as well. Students reveal their assumptive worlds

in their description of events, and in the facts they choose

to use or not to use as evidence. Entry into their world

comes from keen observation followed by questioning,

commenting, and reflecting.

Teachers must be active yet not dominate. They must be

slow to correct or not correct at all--just pose further

questions.[109] "What do you already know about the

situation?" "What is unclear?" "What things would you like

to know before you make your next move?" "What might you

look for to help you determine that?" "Jane, do you agree

with what Bill has said so far?" Rather than answer

students' questions, teachers look for new ones. They often

offer their own uncertainties. Facilitative teachers join

in the exploration, they do not seduce students to arrive at

preset conclusions. Rather they see "questions as

instruments to open engaged minds to unsuspected

possibilities."[110] Clearly, the teacher's role is not so

much to provide students with information, but to get them

to think; not to get something into students' heads but to

get something out.[111] Students, in fact, will frequently

arrive at solutions the instructor has never considered.

> What the teacher says in the classroom is not
> unimportant, but what the students think is a
> thousand times more important. The ideas should
> be born in the students' minds and the teacher
> should act only as midwife.[112]

Challenges must be made and justifications demanded.

Points of issue in need of consideration must be raised.

However, the tone of the question or comment is as important

as the content. You are not "catching" the student in an

effort to win the game of one-ups-manship. Defensive

students cannot inquire openly. Their sense of

vulnerability prevents them from being open or taking

chances. Instructors must be able to lay bare what lies

behind students' verbalizations without attacking. "Indeed,

a rule of thumb in assumption analysis is to use the

indirect rather than a head-on approach whenever

possible."[113] To do otherwise will likely bring on

confusion or intimidation. Instructors should insist on

multiple hypotheses, and at the same time hold the students

responsible for evaluating the strengths and weaknesses of

each. Only then can students develop their own internal

procedures and standards for evaluation and justification.

Teachers must provide some structure yet allow for

spontaneity. A keen ability to observe is essential. "The

facilitator must be sensitive to issues the group may not

even recognize, bringing them to people's attention and

helping everyone make sense of them."[114] Furthermore, all

important issues are value laden and emotions cannot be

avoided. As one becomes a more competent investigator, ever

deeper personal questions require examination. Teachers

must be cognizant of the territory into which they now

venture. It involves students identifying and revaluating

the paradigms through which they interpret their experiences

and define themselves.[115] These are the very guidelines by

which they live. The potential is as explosive as it is

electrifying.

> When working with issues and concerns that touch
> on peoples' self-perception, powerful feelings and
> long held distortions are bound come to the
> surface. Most of the time, it is just these
> sensitive difficult-to-explore issues that hold a
> person back from being as effective as
> possible.[116]

Students become aware that what they held to be "fixed ways of thinking and living are only options among a range of alternatives."[117] This can be shattering. Care must be taken.

> When educators assist people in questioning the assumptions underlying their structures of understanding or in realizing alternatives to their habitual ways of thinking and living...They must ensure that when the foundations of these structures are shaken, the framework of the individual's self-esteem is left intact. It is no good encouraging people to recognize and analyze their assumptions if their self-esteem is destroyed in the process.[118]

As has been stated from the start, enhancing critical thinking skills requires individuals to examine and analyze their frames of reference, those assumptions that give meaning to our lives and our world. This cannot occur without disequilibrium. Disequilibrium is uncomfortable and can be frightening. At times, it is equivalent to losing one's sense of self.[119] "When the self is lost, individuals are often unsure that a new self or frame of reference can be found."[120] Deliberately promoting this development, therefore, carries an ethical responsibility. Teachers are obligated to provide students with "both an emotionally and intellectually supportive environment." That is, they "must not only challenge old perspectives but must support people in their search for new ones."[121] Thus, the teacher "must

create an educational milieu that is developmentally

appropriate."[122]

The Seminar

What constitutes a developmentally favorable

environment?

> Understandably, one may find transformational
> learning threatening, exhilarating, and
> empowering. Such learning requires interaction
> with others to identify alternative perspectives,
> to provide emotional support during the process of
> transformation, to analyze one's own
> interpretation of one's situation from a different
> point of view, to identify one's dilemma as a
> shared and negotiable experience (in the sense it
> is a dilemma by interpretation) and to provide
> models for functioning within the new
> perspective.[123]

Seminars, therefore, provide the potential for the optimal

learning environment. To realize this potential, however,

the seminar's climate must be "one of trust, strict

confidentiality, respect, active listening, [and] equality

of participation."[124] Individuals must be willing to make

public and to critically scrutinize "assumptions to which

they have fervently clung through much   their adult

lives."[125] Furthermore, there must be an "ability to help

people examine their behavior as separate from who they are

and to understand their capability to change."[126] Divergent

views must be aggressively sought and all assumptions should

be open for examination, not ridicule. Participants, then,

can build upon each other's ideas, provide information, and seek clarification. Experimentation can be risked, alternatives explored, and answers changed in the face of new data. The inquiry is not biases in favor of any particular outcome.[127] Rather, executive seminars provide opportunities for attendees to challenge and justify their operating assumptions; and for the reconsideration of their knowledge, values, and beliefs in light of this process.

Executive seminars are not sensitivity training groups or psychotherapy. They are more about thinking than "getting your feelings out." Although unquestionably there will be strong feelings at times, and these emotions do have an impact on how the experiencer thinks. If nothing else, they are symptoms of strongly held, though at times, weakly examined beliefs. Likewise, executive seminars are not what Kurfiss calls "rambling bull" sessions or "wrangling bull" sessions.[128] The distinction between these is that in the former, any opinion is acceptable. "Everyone is entitled to his own opinion." In the latter, the discussion degenerates into an argument in which each side steadfastly advocates the correctness of their opinion. What they have in common, however, is more important. Both these are "quasi-discussions," in which "no true exchange or thoughtful evaluation of ideas takes place."[129]

Prerequisite to true discussion is an openness to discovery and the willingness to at least entertain alternatives. Seminars are designed to incorporate differences. Diversity is not only beneficial, it is essential. A group of fifteen,[130] forty-three year olds, is always going to be more diverse than a similar sized group of ten year olds. Ensuring differences in gender, religious and ethnic background, as well as, variations in personality types and specific lines of work, virtually guarantees multiple perspectives. This miscellany is then used to help students "take off blinders." Their "fairly set ideas and values" are put to public test.[131] In doing so, these assumptions are not only clarified but scrutinized to determine their accuracy and validity. Simultaneously comes the realization of alternatives. Seminar members are now forced to take "note of the values and norms to which [they have] given priority, and those [they have] given less importance, or left out of account altogether."[132] Subsequently, these learners frequently restructure their paradigms to make them more inclusive and integrated. The outgrowth of each inquiry cycle is an enriched frame of reference and an improved capacity to think critically.

A PROGRAM TO ENHANCE TEACHERS' SKILLS[133]

It would be great to be able to end with a sure prescription for success. If you want your students to become better critical thinkers,[134] "do it by the numbers," 1, 2, 3, etcetera. As previously stated, becoming a good teacher takes dogged determination--and that involves time, effort, and creativity, not to mention experimentation and a dash of artistry. Fortunately, ideas that these tenacious teachers can "sink their claws into," can be provided.

Teaching requires many skills.[135] Teachers must be subject matter experts, curriculum developers, and course designers. They must, of course, be proficient in the delivery of instruction. This will be the main focus of the following discussion. Finally, instructors must be able to assess their instruction, be available to students, and perform administrative duties as required. This is pretty tough stuff even for people who have spent years preparing for the profession. For individuals charged with these tasks by virtue of some combination of persons and positions available, it can be frustrating if not downright overwhelming.[136]

Developing good teachers requires not only personal motivation but an institutional commitment. Achieving this end must be the focus of the organization's vision and

values. It must be the central principle, the institutional
lodestar, giving direction to all activities. It must guide
recruitment and selection of personnel. It must govern the
allocation of time and resources. It must give purpose to
the system of rewards and reinforcements.

Officers assigned to the faculty at USAWC are
intelligent and have repeatedly excelled throughout long
careers of military service. As member of a graduate level
faculty, they have great promise; however, few are well
prepared. Most have had little or no experience as college
level teachers. Though not ideal, an accelerated
"developmental" process must be established. This should
consist of mentorships, faculty development workshops, and
time for guided preparation.

The arrival of new faculty must be as synchronous as
possible, and several months prior to them having to assume
classroom duties. New instructors should be assigned to a
core course teaching team and entrusted to a specific, more
senior faculty member who will act as initial mentor. This
mentor should also be teaching the core course, or at very
least, have taught it recently. A formal faculty
development workshop (FDW) should begin almost immediately.
The main purpose of this FDW is to prepare all involved for
their teaching duties, and although the workshop is
conducted by the returning faculty, it is intended to be

every bit as much a continuing developmental and enrichment experience for them, as it is for those who are participating for the first time.

New instructors, as well as "old," need to be introduced to, and reminded of, the mission and philosophy of both USAWC and their respective departments. They must also understand that to be effective teachers, they must be more than subject matter experts. As professional educators, they are in the business of planned change. Their job is to help students to become different. Instructors need to change students' capabilities: what they know, and more importantly, how they use that knowledge, and how they think. Accomplishing this requires planning and using what psychologists and educators know about the learning process and human development. Workshop attendees, therefore, should be instructed in the Systematic Design of Instruction,[137] adult intellectual development,[138] and the concepts of critical thinking.[139] Subsequently, the principal workshop activities should involve developing, revising and practicing the instructional strategies used to help the students achieve the course goals.

Predominantly, the first phase of the FDW should be an intensive period[140] in which the experienced faculty members model various instructional strategies, "tried and tested" or proposed, to facilitate achievement of each lesson

objective. These instructional strategies should consist of both instructional materials and classroom procedures. Each presentation should be followed by an analysis of that strategy, and in turn, by a period of feedback and discussion of alternative strategies.

Central to the analysis is having the presenter explain "Why I used this particular preinstructional activity"[141] and "Why I selected this particular delivery method." Answering these questions forces not only the presenter, but all assembled, to think seriously about the learning process. This activity should prove enlightening to all involved. It permits the more experienced faculty to consolidate, share, and to experiment with ideas born of their experiences. And in most cases, these discussions open a whole new way of thinking for new instructors.

For example, we know that no learning will occur unless the students attend to what is being taught, or perhaps more correctly, to the activities which are to promote learning. So instructors must think seriously about their preinstructional activities. Seminar members enter the classroom from home or other classes; from encounters with family or other students; or sundry other experiences, pleasant and unpleasant, and will face similar circumstances when class ends. They have plenty of things to think about. Instructors, therefore, should be taught to help the

students shift their attention and to bring them mentally "into the classroom." To do so, the instructor needs to catch the students' attention and capture their imagination. This is most easily accomplished through startling facts, provocative problems to be solved, and/or quotations.

Furthermore, we know that motivation, if not essential, certainly enhances the learning process. Therefore, instructors must attempt to motivate the class by establishing the relevance of the material to the class members' lives and by piquing their curiosity. They want students to be saying to themselves, "This is going to be interesting;" and more importantly, "These next three hours are going to be worthwhile." From the outset, the two motives instructors should attempt to arouse are the students' curiosity and the belief that the material to be learned is not only interesting but will be useful to them. Given the nature of the adult student, this is particularly important.[142] Finally, during the preinstructional activities, the instructor should attempt to enhance the meaningfulness of the material by setting the context, where this particular lesson fits into what the students have already learned and will learn in the future. This will not only help gain their attention, but aids both the students' encoding of the material and recall of the information when necessary.

The actual presentation of the subject matter must be the topic of continuous and serious consideration. "Teaching as talking"[143] should be discouraged. It should be clear by now that the transmission of information is but one of the purposes of USAWC's academic program. In fact, for most lesson outcomes, the method of engaging the material is the critical determiner of whether the desired learning will occur. Content is secondary. Thus, discussion of the criteria for selecting an appropriate instructional strategy is paramount (See APPENDIX I).

Ultimately, for seminar participants to develop the attributes essential for effective functioning at the executive level, they will have to develop the capacity to recognize and analyze problems, to select alternate courses of action, to evaluate these alternatives, and to make an informed decision. Students, therefore, are required and must be helped to develop the higher level cognitive skills of analysis, synthesis, and evaluation.[144] Consequently, discussions are the most common vehicle for learning at USAWC; and instructors must sharpen their skills at conducting this difficult learning activity.

Obviously, students need to obtain information and master some facts before they can move on to higher level cognitive activities. However, at USAWC, time generally does not allow this to be the domain of the classroom.

Instructors must design their instructional strategies so
that the presentation of basic knowledge level objectives
can be accomplished by using out-of-class instructional
strategies. Assigned readings is the most common strategy.
Rather than after class practice, "homework" must be done
prior to class.

Reality dictates that frequently all the "required
knowledge" cannot be obtained. However, instructors must
learn not to delay introducing instructional strategies that
require the students to employ higher level cognitive
skills, on the assumption there is some magical number of
facts that must be amassed before students can act on them.
Nevertheless, instructors should be taught from the outset
to develop higher level lesson objectives that can be
accomplished based upon completion of the homework assigned.
In-class teaching strategies can then consist of activities
that provide seminar members opportunities to practice their
higher level cognitive skills. Instructors should
understand that presentation of students' solutions to their
fellow classmates is not sufficient. Rather, the seminar
should become engaged in discussing the process by which the
student, or group, arrived at that particular solution.
Both the product and the methods used to determine it should
be challenged and justified. Challenges too, require
justification. These activities not only permit students to

rehearse, which enhances the transfer and retention of the content, but more importantly, they help the seminar participants to learn the intellectual procedures necessary for actually putting knowledge to use.

Emphasis must be placed on demonstrating how to conduct a discussion. As previously, indicated discussions are neither group therapy nor bull sessions. They are, rather, a forum for modeling and a laboratory for experimenting with critical thinking skills. The new instructors will quickly realize that good discussions do not just happen. To successfully conduct a discussion takes great preparation. Although the instructors' job is not to provide answers, they do not tightly control the flow of conversation, and relevant topics may unexpectedly surface. It helps if the guide does not become lost. The experienced instructors must help as best they can to provide the neophytes, and each other, with "typical" discussion itineraries.

Instructors' primary role in a discussion is that of facilitator. Generally, they are also the goad for the discussion. The stimulus they present should be reasonably clear and based on the assignment or common experience. Once the discussion has been initiated, teachers have a variety of facilitative behaviors at their disposal. Incoming instructors must be made aware of them; and all FDW participants must practice them. Certainly facilitators

should listen and observe attentively--both to content and feelings. At times it is helpful to verify points being made and post them on a chalkboard or butcher paper. They can call on people for their thoughts and test for consensus. Do not assume silence is agreement. From time to time instructors should comment on ideas raised or ask for examples. They should not, however, respond to every utterance. Furthermore teachers must be willing to tolerate silence and pauses. Often, this is time needed for thought, not an indication that the discussants have lost interest. The instructor can periodically summarize or ask it from someone else. However, be cautious, summarizing tends to bring closure. Summaries should not be terminal. They should note trends or the direction of the discussion.[145]

Questions are teacher's most ubiquitous tool for promoting interaction and sustaining discussion, and instructors need to learn how to use them. Teachers can ask for clarification, or more importantly, request students support claims. When improved critical thinking is the goal, one's idea is not as crucial as the reasons behind it. This point bears emphasizing to teachers who are trying to enhance their skills at teaching executive level seminars. The teacher must model for the class that having an opinion is not enough; they need to dig into the "whys" and the "hows" of each other's statements. "Why do you think that?"

"What is your basis for that conclusion?" "How did you go about deciding on that?" Single or superficial responses are not to be accepted. "Right answers," terminate thinking.

Similarly, open-ended and divergent questions are the most beneficial. Questions to which "yes" or "no" are not choices and to which there is no single answer. "How did Lincoln interact with his generals?" "What caused the breakup of the Soviet Union?" Again, instructors should not fear silence. Following a question, be willing to wait for an answer. If you sense the question was misunderstood, rephrase it.[146]

The hope, of course, is that students will soon engage in their own questioning of each other and themselves. Instructors need to know this and be comfortable with it. Moreover, they must encourage it. To promote this interaction do not always look directly at the speaker. Though this is generally common courtesy, it tends to perpetuate student-to-teacher dialogues. Students will often look to the instructor for assurance even when responding to another student's remarks. Either verbally, or by gesture, redirect the student so the group is addressed. Understanding the necessity and character of student-to-student interactions provides instructors the best means of gauging the seminar's success. It is

important that instructors learn to recognize the indicants of growth.

Progress is observable. It can be measured in terms of changes in participants' behaviors. Is there an increase in students' interactions, and in the depth and relevancy of their questions? Are the challenges more frequent and the justifications offered more cogent? Are students more willing to suspend judgment or to modify their stance when the data warrants? Is there more tolerance for diversity, and are students more able to apply generalizations to novel situations? Teachers need to learn to ask themselves these questions and recognize the answers when they see them. These reactions not only indicate effective use of knowledge but the enhanced capacity to produce it.[147] When these behaviors occur, teachers have the right to feel satisfied, perhaps exhilarated. When they do not occur, teachers should determine why not. All this must be demonstrated and practiced during the FDW.

Discussions are not just intellectual; they are emotional. Instructors need to be prepared to deal with the affective aspects. Excuse the redundancy, but the discussions characteristic of executive level seminars involve tampering with what participants view as "common sense" and "human nature"--how they view the world and themselves. Tightly linked to these are values and

feelings. Critical thinking is not as bloodless as the phrase implies. No one ever does become Mr. Spock. Even the character is not fully human.

Instructors must make an effort to be sensitive to students' feelings. Remember, tone of voice and choice of words are important. "That's the dumbest thing I've ever heard!" "Isn't it foolish to ignore what seems to be an obvious indication that what you are suggesting cannot be true?" are not likely to further critical thinking. To challenge someone is not to attack. Be accepting, not judgmental. Seek others' input; let the students make their own evaluations. It is appropriate to be silent after addressing a student, but if it becomes obvious the student does not want to respond move to some one else, or inquire as to what you are sensing. "You seem uncomfortable?" "You seem frustrated." Student frustration is common and instructors must realize that this does not denote "pedagogic failure."[148] Indeed, it may indicate progress. The instructor should acknowledge the feeling and investigate it. "What does it mean `This was a waste of time?'" It may mean they are frustrated because they could not come up with a solution. It may mean they are frustrated because they cannot commit to one of the alternatives they have identified. Or maybe they are angry because "the instructor is not giving enough guidance." All

these, if investigated, could lead to productive outcomes.
Deal with conflicts, do not ignore them. Do not, however,
become the referee or think you need to settle the dispute.
Help clarify the issues causing the disagreement. Restate
what each party is saying to make sure everyone understands
the points being made.[149]

The importance of the modeling, analysis, and critique
procedure that characterizes the first phase of the FDW
cannot be overstated. The modeling is essential in that it
shows the new instructors "how" to conduct a particular
lesson. The returning faculty is, in essence, showing their
new teammates the "playbook." Of course, it also provides
the presenter with an opportunity to practice and
experiment. Of greater importance, perhaps, is the analysis
and feedback. This provides the "why" and therefore allows
the new instructors to go beyond mere duplication to
creation and innovation. Simultaneously, it provides the
presenter the opportunity to make revisions and to improve.
As phase one of the FDW progresses, the new instructors
should also be given several opportunities to practice
conducting classes, analyzing them and receiving feedback.

Video taping of practice sessions provides an
invaluable aid to analyzing, evaluating, and gaining
feedback on performances. Because the video camera
objectively captures and records every detail of the event,

it is more than just another training aid. It is
fundamentally different. Not only does it provide
instructors with more information about what occurred than
is possible with human memory alone, but it allows the
teachers, perhaps for the first time, to see their own
performance as others see it. With the aid of a video,
instructors, while alone at leisure, or in focused sessions
with others, can examine their own performances in minute
detail; replaying, analyzing, and comparing behavior in a
way that is simply not possible while actually engaged in
the teaching.

"I don't know about this video taping thing. That's
pretty threatening stuff. It'd make me so nervous I'd just
mess up." Some anxiety is unavoidable. No one feels fully
at ease when being evaluated. This need not, however, be
threatening. Establishing the right climate in the FDW is
every bit as important as in the seminars these instructors
will soon lead. In actuality, it is unlikely instructors
will learn how to create the proper seminar atmosphere if it
is not modeled in the FDW. While all participants should be
highly motivated, this is not a competitive event. All
involved must appreciate, intellectually and emotionally,
that the FDW is not a short course that needs to be
mastered. Newly arrived officers are not instructor
candidates; they are instructors. There are no graduation

requirements; there is no graduation. Quite truly, they
have just begun a process that will end only when they move
on to another duty. For this "climate" cannot be just a
temporary front. It must be reflective of the
organizational culture. An institution that sees itself as
a community of inquiry, a place of learning in which there
is a shared effort to help each faculty instructor achieve
as high a standard of proficiency as a faculty instructor as
is possible. This tone must emanate from the very top of
the organization.

Phase two of the FDW is essentially an out-of-the-
classroom experience. The instructors use what they have
learned in the first phase to prepare lesson plans, select
and develop instructional aids, and to practice (usually
informally). The more senior faculty should still maintain
close mentor relationships, being readily available to act
as a "sounding board," encourager, information source, and
advisor.

Establishing mentor relationships is another key factor
in transforming assigned personnel from Army officer to
college instructor. As time at USWAC increases, so do
responsibilities. Instructors are given electives and
become course directors. With each change, a new mentor
relationship is formed with the person who is to be
replaced. The individual mentored also becomes a mentor.

This increasing network of senior faculty mentors is as essential as the original FDW in that it ensures all assigned officers constant and continuing tutelage in how to be, and what it means to be, a member of a college faculty.

CLOSING REMARKS

"Teaching" critical thinking and teaching others to teach critical thinking is not risk free. Chief among the risks is disappointment in not obtaining results that match your expectations.[150] Unfortunately, it is difficult to predict what to expect, or when. If at this point the reader understands nothing else about critical thinking, one thing should stand out--it is not easy. Instructors themselves are going to have to make efforts to develop their own skills. So learners will be helping other learners. You may be surprised how well that works! It may be that you just "start to get the hang of it" when your PCS orders arrive.[151] What have you lost? It will take time and progress will vary from person to person. There is little certainty about how to help people learn to be critical thinkers so there are bound to be some false starts. The temptation will be to say "I don't understand enough about this to even attempt to do it." Get started;

you will learn. Be assured, you can only improve, these techniques can in no way impair your cognitive capacities.

It is also possible that future efforts at summative evaluation could indicate that those graduates deemed to be the better critical thinkers did not progress as far in their careers as those judged to be less able. There is no data of which this author is aware indicating that critical thinking insures career progression. "Few employers pay for such activities as contemplating, questioning, and inquiring--many in fact discourage it."[152] Critical thinkers are seen by some as "thorns in the flesh." The do not always "go with the flow." "Since deep thinking is not the norm, it is not unlikely that deep thinkers are more apt to have uncommon and possibly unwelcome ideas."[153] Good thinkers may not even be happier and more well adjusted.[154]

The world is complex, uncertain and full of risks. Promoting critical thinking seems one worth taking. There is little to be lost by trying, yet the consequences of not trying could prove disastrous. This seems like a risk we cannot afford not to take. There is a less practical yet more compelling reason that has "much to do with what we are, and even more, with what we aspire to be." Humans are not creatures of instinct but of learning and thought. Being good thinkers is at the heart of what it means to be human. "[T]o fail to develop one's potential in this regard

is to preclude the full expression of one's humanity. Thinking well is a means to many ends, but it is also and end in itself."[155]

There is no final answer to how best to teach critical thinking. There never will be. Some ideas, however, offer more hope of success in this regard than others. Perhaps the framework offered here will provide encouragement to educators to begin. Or to begin again.

APPENDIX I

Although some educators seem to view teaching as consisting of two separate and unequal components, content and method, such a dichotomy is fatuous. Traditional logic construes the content, trivial or complex, as the substance of the lesson. It is what the teacher is supposed to cover and the students are supposed to learn. Seemingly, the content is unrelated to the method by which it is transmitted. The method, imaginative or uninspiring, is no more than a vehicle for conveying the content. However, graduates of USWAC must be able to make well considered decisions in an ever changing and uncertain world. Therefore, course work must emphasize the development of critical thinking skills rather than mere recall of information. Thus, for many of the learning outcomes upon which the lessons are based, the critical learning experiences are in the methods and procedures through which the learning occurs. The traditional focus is reversed. Instructors must be fully aware of the cognitive requirements implicit in the activities they select for their students to engage. The following provides a list of common instructional methods, factors to be considered in selecting a particular format, and a synopsis of the advantages and disadvantage of the various methods of instruction. The reader should bear in mind that frequently these methods are used in combination.

METHODS OF INSTRUCTION

A. "IN-CLASS" STRATEGIES

1. LECTURE

2. CONFERENCE

3. DISCUSSION

4. DEMONSTRATION

5. PRACTICAL EXERCISE

B. "OUT-OF-CLASS" STRATEGIES

1. READINGS

2. WORKSHEETS

3. COMPUTER TUTORIAL

4. VIDEO TAPES

FACTORS IN SELECTION
OF METHOD OF INSTRUCTION

1. OBJECTIVES (LEVEL)

2. NATURE OF MATERIAL

3. STUDENTS' BACKGROUND

4. STUDENTS' MOTIVATION

5. INSTRUCTOR'S SKILLS

6. CLASS SIZE

7. TIME

8. EQUIPMENT

LECTURE METHOD[156]

ADVANTAGES	DISADVANTAGES
1. CLEAR PRESENTATION OF MATERIAL (IF LECTURER IS GOOD)	1. STUDENTS' ATTENTION OFTEN WANDERS
2. STUDENTS SEE A PROFESSIONAL AT WORK	2. STUDENT IS PASSIVE
3. EFFECTIVE CONVEYOR OF "LOW-LEVEL" OBJECTIVES	3. POOR CONVEYOR OF "HIGH-LEVEL" OBJECTIVES
4. ACCEPTED BY ACADEMIC COMMUNITY	4. LIMITED OPPORTUNITY TO ASK QUESTIONS
5. ECONOMICAL	5. LITTLE FEEDBACK TO INSTRUCTOR
	6. NO OPPORTUNITY FOR STUDENT PRACTICE OR DEVELOPMENT OF HIGHER ORDER THINKING SKILLS
	7. STUDENTS NOT REINFORCED FOR PREPARATION

CONFERENCE METHOD

ADVANTAGES	DISADVANTAGES
1. ALL THE ADVANTAGES NOTED UNDER "LECTURE"	1. DOES NOT ALLOW DIFFERENT CONCLUSIONS
2. CAN CONVEY "HIGHER-LEVEL" OBJECTIVES	2. LITTLE OPPORTUNITY TO PRACTICE APPLICATION LEVEL OBJECTIVES
3. STUDENTS ARE ACTIVE	3. DOES NOT ALLOW FOR FULL RANGE OF HIGHER ORDER THINKING SKILLS TO BE PRACTICED
4. IMMEDIATE FEEDBACK ON STUDENTS' UNDERSTANDING OF MATERIAL	
5. STUDENTS ARE REINFORCED FOR PREPARATION	

DEMONSTRATION

ADVANTAGES	DISADVANTAGES
1. GOOD CONVEYOR OF THE PROPER ACTION/TECHNIQUE FOR PERFORMING A CERTAIN BEHAVIOR OR APPLYING PRINCIPLES	1. STUDENTS ARE PASSIVE
	2. LACKS FEEDBACK REGARDING STUDENTS' UNDERSTANDING OF MATERIAL
2. STUDENTS SEE A PROFESSIONAL AT WORK	3. CAN ONLY BE USED EFFECTIVELY WITH SMALL GROUPS
	4. HIGHER ORDER THINKING SKILLS CANNOT BE PRACTICED

DISCUSSION

ADVANTAGES	DISADVANTAGES
1. STUDENTS ARE ACTIVE	1. CAN BE USED ONLY WITH SMALL GROUPS
2. ALLOWS ALTERNATE POINTS OF VIEW	2. CAN SPEND TIME ON EXTRANEOUS ISSUES
3. GOOD CONVEYOR OF "HIGHER-LEVEL" OBJECTIVES	3. REQUIRES MOTIVATED STUDENTS
4. SOME STUDENTS LIKE TO LEARN FROM PEERS	4. STUDENTS ARE SUBJECTED TO SOME MISINFORMATION
5. STUDENTS ARE REINFORCED FOR PREPARATION	5. FEEDBACK ON STUDENT UNDERSTANDING OFTEN NOT CLEAR
6. ALLOWS MANY ALTERNATIVE SOLUTIONS	
7. MOTIVATES STUDENTS TO PARTICIPATE IN LEARNING PROCESS	
8. STUDENTS CAN LEARN AND PRACTICE HIGHER ORDER THINKING SKILLS	

PRACTICAL EXERCISE

ADVANTAGES	DISADVANTAGES
1. EXCELLENT CONVEYOR OF APPLICATION LEVEL OBJECTIVES (ALLOWS PRACTICE)	1. MOST EFFECTIVE WITH SMALL CLASSES
	2. TIME CONSUMING
2. REQUIRES STUDENTS TO PARTICIPATE IN LEARNING PROCESS	3. REQUIRES TRAINED FACILITATOR
3. MOTIVATION COMES FROM PEERS NOT JUST INSTRUCTOR	4. DIFFICULT TO EVALUATE THE PROGRESS OF AN INDIVIDUAL STUDENT SEPARATE FROM THE GROUP
4. STUDENTS LEARN TO WORK TOGETHER WHEN SOLVING PROBLEMS	
5. ALLOWS STUDENTS TO USE HIGHER ORDER THINKING SKILLS	

"OUT-OF-CLASS" STRATEGIES

ADVANTAGES

1. DON'T HAVE TO USE CLASS TIME FOR "LOW-LEVEL" OBJECTIVES

2. PREPARES STUDENT FOR CLASS

3. ALLOWS STUDENT TO REMEDIATE

DISADVANTAGES

1. REQUIRES STUDENT MOTIVATION

2. POOR CONVEYOR OF "HIGHER-LEVEL" OBJECTIVES

ENDNOTES

[1]Senator Nancy Kassenbaum, speech presented as a distinguished guest speaker to the Class of 1992, at the United States Army War College, 28 Oct 1991.

[2]Carl Von Clausewitz, On War, trans. & ed. Michael Howard and Peter Paret (Princeton: Princeton University Press 1989) 100.

[3]U.S. Army War College, United States Army War College Resident Student Manual: Academic Year 1992 (Carlisle Barracks, 1991) 1-1.

[4]This refers to the top or upper two echelons of an organization depending on its size and structure. In the military it would pertain to the top two levels: senior and strategic leaders. Department of the Army Pamphlet 600-80: Executive Leadership (Washington: GPO, 19 Jun 1987) 2.

[5]Ibid. 3.

[6]The metaphor of a "lens" for "frame of reference" is taken from Stephen R. Covey, The 7 Habits of Highly Effective People, (New York: Fireside 1989) 17. Frame of reference and paradigm will also be used interchangeably.

[7]The USAWC graduate will recognize this as a reference to Arthur F. Lykke, Jr.'s formula for understanding military strategy. The "non-graduate," in all probability will not. His general concept is that Strategy equals Ends (objectives) plus Ways (courses of action) plus Means (instruments by which an end can be achieved). Arthur F. Lykke, Jr., "Toward An Understanding of Military Strategy," Military Strategy: Theory and Applications, ed. Arthur F. Lykke, Jr. (USAWC: Carlisle Barracks 1989) 3.

[8]U.S. Army War College, United States Army War College Resident Student Manual. 1-1.

[9]Covey 17.

[10]The term executive, executive-level leader, senior leader, strategic leader will all be used relatively synonymously to refer to the top one or two echelons of an organization, depending on its size. In the military it would include the top two echelons, senior and strategic leaders.

[11]Donald A. Schon, The Reflective Practitioner, (San Francisco: Josey-Bass Publishers, 1983). The term "problem

setter" is used by Schon, and subsequently others, to refer to the ability to identify the problem to be solved.

[12]Ibid. 103.

[13]There is obviously a relativity to this statement. A variety of thinking skills are required at all levels. However, effective thinking at the most senior levels of leadership is characterized chiefly by one's ability to define the future.

[14]Mike Pedler, Action Learning in Practice, (Aldershot: Grover Publishing Company Limited, 1983) 12. The USAWC prefers the less graphic phrase "volatility, uncertainty, complexity, and ambiguity."

[15]Ibid. Pedler uses the term expert to characterize the high quality technicians who bring their skills to bear on solving assigned problems. The modern aphorism, "The problem with computers is they do exactly what you tell them to and not what you want them to do," may come to mind. Those a bit more historically minded may have flashes of an Edsel, Pickett's charge, or perhaps, Vietnam.

[16]Donald A Schon, Educating The Reflective Practitioner, (San Francisco: Jossey-Bass, 1987) 3.

[17]Ibid. 4.

[18]Schon 40.

[19]Clausewitz 102.

[20]MBTI refers to the Myers-Briggs Type Indicator. Otto Kroeger and Janet M. Thuesen, The Typewatching Profiles, (Bantam Doubleday Dell Publishing Group, 1989). In this booklet based on the Myers-Briggs Type Indicator, the authors suggest that there are four temperaments, in addition to the sixteen types. "NTs" are supposedly creative and intuitive people who have the ability to quickly see the "big picture." "SJs" prefer a life full of routines and procedures. No serious discussion of this inventory is intended.

[21]Clausewitz 102-103.

[22]This is referring to the individual's "frame of reference" or cognitive "lens."

[23]Schon The Reflective Practitioner 138.

[24]Ibid.

[25]Ibid. 137. Schon uses the term "problem-setting experiment." Implicit in this is that problem solving will follow.

[26]Ibid. 40.

[27]Pedler 56.

[28]Robert J. Sternberg gives a similar description of insight. He discusses three processes: selective encoding, selective combination, and selective comparison. Selective encoding "involves sifting out relevant information from irrelevant information." Selective combination "involves combining what might originally be seen to be isolated pieces of information into a unified whole that may or may not resemble its parts." Selective comparison "involves relating [the] newly acquired information to information acquired in the past." See Robert J. Sternberg, Intelligence Applied: Understanding and Increasing Your Intellectual Skills (San Diego: Harcourt Brace Jovanovich, Publishers, 1986) 210-211.

[29]Schon

[30]Pedler

[31]Sorry for what might seem like an ostentatious inclusion of jargon. However, there was no suitable substitute. Metacognition merely refers to the human capacity to monitor one's own thoughts and to have awareness of their contents.

[32]Ibid. 55.

[33]Joanne G. Kurfiss, Critical Thinking :Theory, Research, Practice and Possibilities (Washington, D.C.: Association for the Study of Higher Education, 1988) 2. It may also help to note an important distinction between critical thinking, problem-solving and creative thinking. Critical thinking is applied to open-ended, ill-defined situations for which there is no perfectly right answer. In fact, there are often questions about just what the problem is. Problem solving suggests that there is a solution, and t..inking skills are applied to finding it. Creative thinking has to do with formulating and alternate ways of viewing a problem. Critical thinking would seem to be a broader concept that includes problem solving and creative thinking.

[34] Ibid.

[35] Ibid.

[36] Karen S. Kitchener and Patricia M. King, "The Reflective Judgment Model: Transforming Assumptions About Knowing," Fostering Critical Reflection in Adulthood, Jack Mezirow and Associates (San Francisco: Jossey-Bass 1990) 160.

[37] Kurfiss xv. Kurfiss mentions three similar factors in a similar way.

[38] Schon, The Reflective Practitioner 35.

[39] Wilbert J. McKeachie, Paul R. Pintrich, Yi-Guang Lin, and David A.F. Smith, Teaching and Learning in the College Classroom: A Review of the Literature (Ann Arbor: National Center for Research to Improve Postsecondary Teaching and Learning 1986) 63.

[40] Three very readable sources are: R.F. Mager, Preparing Instructional Objectives (Palo Alto: Fearon 1962); R.M. Gagne, The Conditions of Learning, (New York: Holt, Rinehart and Winston 1965); and W. Dick and L. Carey, The Systematic Design of Instruction, (Glenview: Scott, Foresman and Co. 1978).

[41] Malcolm Knowles, The Adult Learner: A Neglected Species, 2ed, (Houston: Gulf Publishing Company 1978) 120.

[42] J.J Schwab, "The Practical: Arts of Eclectic," School Review, LXXIX (August, 1971) 493-542. Two very concise and readable discussions of the controversy can be found in Knowles, pages 117-121, and Gerald S. Hanna and William E. Cashin, "Matching Instructional Objectives, Subject Matter, Tests, and Score Interpretations," IDEA Paper No. 18 (Kansas State University: Center for Faculty Evaluation and Development Sep 1987).

[43] Hanna and Cashin 1.

[44] Ibid. 2.

[45] Examples are as follows. One can specify and master the letters of the alphabet. It is also probably essential to do that if you desire to be a literate citizen of a country. One could specify and master learning all the parts to a car. However, it is not necessary to do that if your goal is to get a driver's license. However, although

you could specify all 30,000 parts of a tank, memorizing them probably cannot be mastered. Fortunately, there is probably no reason why it would be essential. Finally, you can neither completely specify nor completely master what it means to be a good Christian.

[46]Kurfiss 107.

[47]It would seem that the administration of USAWC determined that this schooling will not be a discriminator. The criteria "meets standards," is indeed broad. And this is probably appropriate. It would be unreasonable to expect each graduate to attain the same level of achievement. It would also be quite difficult to objectively define the minimum standard, except in the broadest terms (such as "Fails to complete all requirements"). USAWC does, however, offer each student the opportunity to develop as best he or she can. The attendees' organizations subsequently will observe them on the job before making the final selections for who reaches the very pinnacle of that organization.. This is probably characteristic of most executive seminars.

[48]Hanna and Cashin 3.

[49]Raymond S. Nickerson, David N. Perkins, and Edward E. Smith, The Teaching of Thinking (Hillside: Lawrence Elbaum Associates, Publishers 1985) 330.

[50]Edys S. Quellmalz, "Developing Reasoning Skills," J.B. Baron and R. J. Sternberg, Teaching Thinking Skills: Theory and Practice (New York: Freeman, 1986) 91.

[51]Hanna and Cashin 3. This reference contains a more extensive listing which may be of interest and assistance to anyone attempting to develop instruction.

[52]Raymond S. Nickerson "Why Teach Thinking?" J.B. Baron and R. J. Sternberg, Teaching Thinking Skills: Theory and Practice (New York: Freeman, 1986) 30.

[53]Robert H. Ennis, "A Taxonomy of Critical Thinking Dispositions and Abilities, J.B. Baron and R. J. Sternberg, Teaching Thinking Skills: Theory and Practice (New York: Freeman, 1986) 12-15. A complete listing of Ennis' "dispositions" and "Abilities," may be found here.

[54]Nickerson.

[55]Nickerson et al. 63.

[56]As will eventually be noted in this section, a common error in thinking is a failure to examine "the obvious."

[57]These four have been documented by Malcolm S. Knowles in numerous works.

[58]Malcolm S. Knowles and Associates, Andragogy in Action: Applying Modern Principles of Adult Learning (San Francisco: Josey-Bass Publishers 1984) 9-13.

[59]K. Patricia Cross, Adults As Learners, (San Francisco: Jossey-Bass, 1981) 167.

[60]Jean Piaget, "Intellectual Evolution from Adolescence to Adulthood," Human Development 15 (1972) 1-12.

[61]William G. Perry, Forms of Intellectual and Ethical Development in the College Years (New York: Holt, Rinehart and Winston, 1970). It is suggested that readers interested in education and development familiarize themselves with this work.

[62]Sometimes the author just cannot help himself. He is, however, unremitting in his belief that reading and writing serious material should be fun.

[63]Jack Mezirow, "Perspective Transformation," Adult Education [28 (2), 1978]100-110

[64]The "stories" we tell ourselves in a very real sense determine our reality. For example, if in the past you believed that Russia was an "evil empire," your response to their military build-up would likely be different, than if you viewed them as a nation that had often been devastated by invasion.

[65]Pedler 56

[66] Cross 167. The sequencing of these sentences has been altered, but the words are Dr. Cross's.

[67]John Peters, "The Action-Reason-Thematic Technique: Spying on the Self," Fostering Critical Reflection in Adulthood, Jack Mezirow and Associates (San Francisco: Jossey-Bass 1990) 314.

[68]Jack Mezirow, Fostering Critical Reflection in Adulthood, Jack Mezirow and Associates (San Francisco: Jossey-Bass 1990) xiii.

[69]Ibid. xii.

[70]Ibid. 12.

[71]Stephen Brookfield, "Using Critical Incidents to Explore Learners' Assumptions," Fostering Critical Reflection in Adulthood, Jack Mezirow and Associates (San Francisco: Jossey-Bass 1990) 178.

[72]If you caught this, you recognize a possible lack of objectivity on the author's part. Such recognition is one of many critical thinking skills.

[73]Ibid. Nickerson et al. 62.

[74]Ibid.

[75]D.N. Perkins, "Thinking Frames: An Integrative Perspective on Teaching Cognitive Skills," J.B. Baron and R. J. Sternberg, Teaching Thinking Skills: Theory and Practice (New York: Freeman, 1986) 42.

[76]This thought came from a conversation the author had with COL George B. Forsythe, Professor of Psychology and Leadership, Department of Behavioral Sciences and Leadership, United States Military Academy, West Point, New York.

[77]To the non-War College reader, VUCA is the hackneyed acronym for volatile, uncertain, complex [and] ambiguous, descriptive of the environment in which executive leaders must function. Some may question the appropriateness of such interludes within the text--or even notes-of a formal and serious manuscript. The author contends that serious does not have to mean grim. Moreover, he hopes the reader will be more motivated to continue, and perhaps share it with another. The author is also convinced that it enhances recall.

[78]Eugene B. Zechmeister and James E. Johnson, Critical Thinking: A Functional Approach (Pacific Grove: Brooks/Cole Publishing Company 1992) 5. Many scholars mention the same three elements. This discussion, however, will come mostly from this book. The author highly recommends this book to anyone looking for a very simple language and common sense approach to learning and helping others to learn critical thinking skills. It might well prove to be a useful book to include in students' initial issue of books.

[79]Ibid.

[80]Kurfiss xv.

[81]H.H. Kelly, Personal Relationships (Hilsdale: Lawrence Erlbaum 1979).

[82]General Psychology Course Guide (West Point: United States Military Academy 1990) 8.

[83]Ibid 19.

[84]R.D. Naverson, "Development and Learning: Complementary or Conflicting Aims in Humanities Studies?" R.G. Fuller et al. (Eds.), Piagetian Programs in Higher Education (Lincoln: ADAPT Program 1980) 79-88. This phenomenon is called the "confirmation bias."

[85]D. Kahneman and A. Tversky, "Subjective Probability: A Judgment of Representativeness," Psychological Review (80 1972) 430-454; A. Tversky and D. Kahneman, "Availability: A Heuristic for Judging Frequency and Probability: Heuristics and Biases," Science, 185 (1973) 1124-1131. This is called the "availability heuristic."

[86]Expanded lists of logical fallacies can be found in Nickerson et al., 111-140; I. Roth, Fostering Critical Reflection in Adulthood, Jack Mezirow and Associates (San Francisco: Jossey-Bass 1990) 116-133; Zechmeister and Johnson.

[87]Roger Peters, Practical Intelligence (New York: Harper and Row 1987) 241-262.

[88]J.D. Bransford and B.S. Stein, The Ideal Problem Solver: A Guide for Improving Thinking, Learning, and Creativity (San Francisco: Freeman 1984). Also J.D. Bransford, R.D. Sherwood and T. Sturdevant, "Teaching Thinking and Problem Solving," J.B. Baron and R.J. Sternberg (eds), Teaching Thinking Skills, (New York: Freeman 1986) 163-180.

[89]Our brain, like so many things, follows the course of least resistance and most efficiency. It provides us with psychological processes that enhance our adaptability and increase our survivability in the world. Generally, these heuristics or "rules of thumb" by which we live are, in fact, accurate and during times of doubt give us the safest course of action. It may well be more in our personal interest to treat a person walking toward us with a gun as someone who intends us harm than as a person on the way home from the gun shop. Though the latter is statistically more common, a mistake in the other direction carries much

greater consequences. However, when these heuristics are overly used, as generally the case becomes, they can have just as devastating effects.

[90]Peters 246. The author assumes that no one will ever read this who is not familiar with Mr. Spock from Star Trek.

[91]Peters 256.

[92]Ibid. 259.

[93]Bransford, Sherwood and Sturdevant, 163.

[94]Ibid. 161.

[95]Several other formal programs exist regarding teaching thinking skills. Some are: ADAPT (Accent on the Development of Process Thought), DOORS (Development of Operational Reasoning), COMPAS (Consortium for Operating and Managing Programs for the Advancement of Skills), SOAR (Stress On Analytical Reasoning), and DORIS (Development Of Reasoning In Science), are described in Nickerson et al., 231-245. These programs, however, have specific target groups and will not be totally adaptable to executive level seminars. Some ideas on more generalized and transferable method of critically thinking may be found in Baron and Sternberg (eds.), 41-148. This section is entitled "General Approaches to the Teaching of Thinking Skills." The specific chapters are as follows: D.N. Perkins, "Thinking Frames: An Integrative Perspective on Teaching Cognitive Skills, 41-61; also "Knowledge as Design: Teaching Thinking Through Content," 62-85; E.S. Quellmalz, "Developing Reasoning Skills," 86-105; R.J. Swartz, "Teaching for Thinking: A Developmental Model for the Infusion of Thinking Skills into Mainstream Instruction," 106-126; R.W. Paul, "Dialogical Thinking: Critical Thought Essential to the Acquisition of Rational Knowledge and Passions," 127-148. These are very helpful articles. They, of course, have been referenced throughout this paper. As already mentioned above, Zechmeister and Johnson provide a low level but very helpful text. Finally, R.H. Ennis, "A Concept of Critical Thinking: A Proposed Basis for Research in the Teaching and Evaluation of Critical thinking Ability," Harvard Educational Review (32 Winter 1962) 81-111, offers twelve aspects of critical thinking that could be part of the content of a course or lessons on critical thinking.

[96]Pedler 14.

[97]Quellmalz 94.

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[98]Nickerson et al. 251.

[99]Ibid. 258.

[100]Kurfiss 4.

[101]Nickerson et al. 46.

[102]Knowles, The Adult Learner: A Neglected Species, 30.

[103]Zechmeister and Johnson 5.

[104]Ibid. 6-7.

[105]Schon Educating the Reflective Practitioner, 338.

[106]Knowles, The Adult Learner: A Neglected Species, 30. Perhaps this is the toughest paradigm of all to break, teacher as authority, student as passive recipient of knowledge. However, this is the essential first step that must be taken if critical thinking is to occur.

[107]Brookfield 179-180.

[108]CPT Richard D. Hooker and MAJ David A. Grossman, "MWS Newsletter," Jan, 1991: 2. This has separated the civilians from the military, and probably many a military reader is confused. OODA loop refers to the "observation-orientation-decision-action" cycle. This cycle describes a sequence of events common to all battlefield decisions. Basically, it is the attempt for a soldier to try to get "inside" the opponent's thinking in order to catch the enemy off guard. This represents the author's subtle attempt to deal with resistance that might come from an officer thinking, "This stuff is too `touchy-feely' for me." This is actually a combat skill practiced as peacetime engagement.

[109]Questions are undoubtedly the teachers main tool. Obviously "The Complete List of Insightful Questions," cannot be written. However, several very helpful sources are available. M. Neil Browne and Stuart M. Keeley, Asking the Right Questions: A Guide to Critical Thinking (Englewood Cliffs: Prentice-Hall, Inc. 1986); Howard S. Barrows, M.D. and Robyn M. Tamblyn, B.Sc.N., Problem-Based Learning: An Application to Medical Education (New York: Springer Publishing Company 1980) 71-90; and Michael Sanderson, What's the Problem Here? (New York: Prentice-Hall, Inc. 1981).

[110]Knowels, The Adult Learner: A Neglected Species, 83.

[111]Nickerson et al. 327.

[112]G. Polya, qtd. Nickerson et al. 327. The date given for the Polya quote is 1965, and the page 104, however, only a book in French is listed by this author in 1965. Comment Poser et Resoundre Un Probleme: Mathematiques, Physique, Jeux, Philosphie (Paris: Dunod 1965) 104.

[113]Victoria J. Marsick, "Action Learning and Reflection in the Workplace, "Fostering Critical Reflection in Aduithood, Jack Mezirow and ˋssociates (San Francisco: Jossey-Bass 1990) 23-46.

[114]Ibid. 38.

[115]Marsick 43.

[116]Brookfield 181.

[117]Ibid. 178

[118]Ibid.

[119]Kitchener and King 168.

[120]Ibid.

[121]Ibid.

[122]Ibid.

[123]Mezirow xiv.

[124]Marsick 38.

[125]Brookfield 181

[126]Marsick.

[127]Nickerson et al. 336-337.

[128]Kurfiss 66.

[129]Ibid.

[130]The discussion has revolved around the intellectual and attitudinal characteristics of an executive seminar. There is, of course, a physical dimension. For example, the

number of participants should probably be about fifteen.
These people should be arranged in a circle, square, or
rectangle so as to allow everyone as clear a view of the
others as possible. This creates the expectation that all
should participate. It also prevents people from sitting in
the background. It may even help to have attendees sit in
different seats each time so as to interact more closely
with a wider number of seminar members.

[131]Marsick 33.

[132]Schon The Reflective Practitioner 310.

[133]At the outset the author would like to acknowledge
collaboration with COL George B. Forsythe, Professor of
Psychology and Leadership, Department of Behavioral Sciences
and Leadership, United States Military Academy (USMA), West
Point, New York. For nearly a decade the two of us have
worked closely at USMA in the area of faculty development.
So, much of what will be suggested here is in some way an
outgrowth of these years together. Furthermore, I have both
notes taken by COL Forsythe in his discussions with the
Department of Command, Leadership, and Management, USAWC, in
May 1990, and "MEMORANDUM FOR BS&L ELECTIVES FACULTY,"
SUBJECT: Electives Faculty Development Workshop, 22
November 1991. These documents have helped in organizing
this section. Much of what appears here is also taken from
an manuscript, "Teaching Introductory Psychology at the
United States Military Academy," written by this author and
published in Resources in Education, #ED274256. Washington,
DC: Clearinghouse on Higher Education, 1987.
    One further note should be made. This section will
describe the contents of a proposed Faculty Development
Workshop (FDW). This, in reality, represents only a part of
what should be a larger Faculty Development Program.
Furthermore, the bulk of what is offered specifically deals
with enhancing instructors' skills to conduct developmental
discussions. While this is the most significant need, it
too, is but a portion of a comprehensive FDW. Other
elements are mentioned but not discussed in detail. There
simply was not enough time. References to helpful sources
of information, however, have been provided. This section
figuratively speaking, presents the "tactical" level of
teaching--the delivery of instruction. A more expanded
program of faculty develop would include Course Design and
Curriculu Development.

[134]Nickerson et al. 336.

[135]William E. Cashin, "Defining and Evaluating College
Teaching," IDEA Paper No. 21 (Kansas State University:

Center for Faculty Evaluation and Development Sep 1989) 1-2. This paper outlines seven areas that must be considered in defining and evaluating a teacher. They are: subject matter mastery, curriculum development, course design, delivery of instruction, assessing instruction, availability to students, and ability to perform administrative requirements.

[136]Up to this point, executive level seminars have been discussed at times in general and at others with USAWC in mind. The program to be outlined here pertains specifically to the USAWC.

[137]The reader is reminded of these three sources previously mentioned: R.F. Mager, Preparing Instructional Objectives (Palo Alto: Fearon 1962); R.M. Gagne, The Conditions of Learning, (New York: Holt, Rinehart and Winston 1965); and W. Dick and L. Carey, The Systematic Design of Instruction, (Glenview: Scott, Foresman and Co. 1978). The reader should also keep in mind that some, to include this author, think the philosophy presented in these books is a bit rigid. Therefore the following are also recommended. J.J Schwab, "The Practical: Arts of Eclectic," School Review, LXXIX (August, 1971) 493-542. Two very concise and readable discussions of the controversy can be found in Knowles, pages 117-121, and Gerald S. Hanna and William E. Cashin, "Matching Instructional Objectives, Subject Matter, Tests, and Score Interpretations," IDEA Paper No. 18 (Kansas State University: Center for Faculty Evaluation and Development Sep 1987).

[138]The reader can find good coverage of these topics in the books by William Perry, Malcolm Knowles, and K. Patricia Cross, previously listed.

[139]This topic, of course is covered throughout this paper. Interested readers might want to read any number of the books previously listed. Most helpful are works by Joanne Kurfiss, Donald Schon, Mike Pedler, and by Zechmeister and Johnson. The author has also been informed that the Air Force Institute of Technology, Wright-Patterson AFB, has blocks of instruction on critical thinking. The reader may want to obtain copies of the program of instruction and/or lesson plans.

[140]Planners will have to decide on the length of time needed. It should, however, be in the range of 2-4 weeks, not just a few days.

[141]By the time the modeling of classes is started FDW participants will understand terms such as "preinstructional

strategy" and "instructional strategy." This is part of the Systematic Design of Instruction material.

[142]The student will recall that adult learners are not subject-oriented. They are problem-oriented learners; furthermore they have a sense of immediacy about the use of what they learn.

[143]K. Patricia Cross, "Taking Teaching Seriously" (Paper presented at the Annual Convention of the Association for Higher Education, Washington D.C. March 1986)

[144]B.S. Bloom, M.D. Engelhart, E.J. Furst, W.H. Hill and D.R. Krathwohl, Taxonomy of Educational Objectives: Handbook I-Cognitive Domain (New York: David McKay 1956)

[145]William E. Cashin and Philip C McKnight, "Improving Discussions, "IDEA Paper No. 15 (Kansas State University: Center for Faculty Evaluation and Development Jan 1986).

[146]Ibid.

[147]Knowles, The Adult Learner: A Neglected Species 85-86.

[148]Brookfield 191.

[149]Cashin and McKnight

[150]Nickerson et al. 344.

[151]There is little doubt that the lack of a significant core of permanent, or at least extended tour, faculty makes any faculty development efforts a good deal more difficult.

[152]Nickerson 30.

[153]Ibid. 31.

[154]Ibid.

[155]Ibid. 32

[156]USMA Faculty Development Program (West Point: United States Military Academy 1980) 6-7. This chart is adapted from a chart in this document.

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